7.0 FIELD ACTIVITIES

INTRODUCTION

This chapter includes standards for sampling and field measurement activities which are not explicitly covered in other NELAC standards. Because of the use of temporary facilities, field equipment, and the effect of environmental conditions, field standards are necessary to ensure the adequacy of the resulting data.

7.1 GENERAL FIELD SAMPLING STANDARD

7.1.1 Scope

a)This standard specifies the general requirements for the competence to carry out sampling. It is applicable to laboratories as well as non-laboratory organizations which do environmental compliance sampling.

b) If more stringent standards or requirements are included in a mandated method or by regulation, the field sampling organization shall demonstrate that such requirements are met. If it is not clear which requirements are more stringent, the standard from the method or regulation is to be followed.

7.1.2 Technical records

Records shall include the identity of personnel responsible for sampling. Observations, data and calculations shall be recorded at the time they are made and shall be identifiable to the specific task.

7.1.3 Personnel

a) The field sampling organization shall use personnel who are employed by, or under contract to the organization. Where contracted and additional technical and key support personnel are used, the organization shall ensure that such personnel are supervised and competent and that they work in accordance with the organization's quality system.

b) The management of the field sampling organization shall formulate the goals with respect to the education, training and skills of the sampling personnel. The organization shall have a policy and procedures for identifying training needs and providing training of personnel. The training program shall be relevant to the present and anticipated sampling tasks of the organization.

c) The management shall authorize and ensure the competence of specific personnel to perform particular types of sampling. The field sampling organization shall maintain records of the relevant authorization(s), competence, educational and professional qualifications, training, skills and experience of all technical personnel, including contracted personnel. This information shall be readily available and shall include the date on which authorization and/or competence is confirmed.

7.1.4 Accommodation and environmental conditions

The sampling team shall ensure that the field environmental conditions do not invalidate the results or adversely affect the required quality of any measurement. The technical requirements for accommodation and field environmental conditions that can affect the result of tests shall be documented.

7.1.5 Sampling Methods

The field sampling organization shall use appropriate methods and procedures for all tests within its scope, including sampling, equipment decontamination, handling, transport, chain-of-custody, storage, and preparation of samples to be tested.

a) The field sampling organization shall use sampling methods which meet the regulatory needs of the client and which are appropriate for the tests it undertakes. Sampling methods published in international, regional or national standards shall preferably be used.

b) The field sampling organization shall validate non-standard sampling methods, in-house designed/developed methods, standard methods used outside their intended scope, and amplifications and modifications of standard methods to confirm that the methods are fit for the intended use.

7.1.6 Equipment

a) The samplers shall be furnished with all items of sampling equipment required for the correct performance of the tests. In those cases where the field sampling organization needs to use equipment outside its permanent control, it shall ensure that the requirements of this standard are met.

b) Equipment and its software used for sampling shall be capable of achieving the accuracy required and shall comply with specifications relevant to the tests concerned. When received, sampling equipment shall be checked to establish that it meets the organization's specification requirements, complies with the relevant standard specifications, and shall be checked and/or calibrated before use.

7.1.7 Sampling Procedures

a) The field sampling organization shall have a sampling plan and procedures for sampling when it carries out sampling for subsequent testing. Sampling procedures describe the selection, sampling plan, withdrawal and preparation of samples from a matrix to yield the desired information and the use of field blanks and other quality control samples. The sampling plan as well as the sampling procedure shall be available at the location where sampling is undertaken. Sampling plans shall be based on communication with the client and, whenever reasonable, be based on appropriate statistical methods. The sampling process shall address the factors

to be controlled to ensure the validity of the tests.

b) Where the client requires deviations, additions or exclusions from the documented sampling procedure, these shall follow procedures developed by the organization to record in detail the appropriate sampling data to include in all documents containing test and/or calibration results, and shall be communicated to the appropriate personnel.

c) The field sampling organization shall have procedures for recording relevant data and operations relating to sampling that forms part of the testing that is undertaken. These records shall include the sampling procedure used, the identification of the sampler, environmental conditions (if relevant) and the diagrams or other equivalent means to identify the sampling location as necessary and, if appropriate, the statistics the sampling procedure are based upon.

d) A sampling procedure and information on storage and transport of samples, including information on sampling factors affecting the test result shall be provided to those responsible for taking and transporting the samples.

7.1.8 Sample reports

Reports containing the results of sampling shall include the following, where necessary for the interpretation of test results:

a) sampling organization, including address, phone number, and email address

b) printed name and signature of sampler, plus names of all members of the sampling team

c) sample type, including an unambiguous identification of the matrix sampled;
d) sample identification number (including a unique identification number for each sample container)

e) reason for sampling

f) date and time of sampling

g) location of sampling, including any diagrams, sketches, or photographs; name of sampling station, latitude, longitude, and altitude

h) for stack emission sampling: the height above grade of the sample point, stack diameter, stack discharge temperature, and flow rate

i) for water sampling: the water level measure, sample depth, and water discharge rate measure

j) reference to the sampling plan and procedures used, including field blanks, spikes and

duplicates; instrument calibration, span, drift, and calibration standards; sampling system bias and response time; and field test standards and reagents

k) sample preservation, treatment, transportation, and storage, including a description of sample containers and sample chain of custody

l) details of any environmental conditions during sampling that may affect the interpretation of the test results

m) any standard or other specification for the sampling method or procedure, and deviations, additions to or exclusions from the specification concerned.

n) The organization collecting samples shall certify that samples were collected in accordance with NELAC standards or provide reasons and/or justification if they were not.

Appendix A - REFERENCES

ISO/IEC 17025:1999(E). "General Requirements for the Competence of Testing and Calibration Laboratories," 1999.